

MOUND TRITIUM D&D LARGE-SCALE DEMONSTRATION AND DEPLOYMENT PROJECT

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Deactivation and Decommissioning Focus Area
Mid-year Review
May 26, 1999





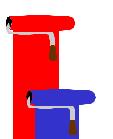
- Project History - The Mound Site

- Labs in Dayton, part of Manhattan Project - Consolidated in 1947, to site in Miamisburg, Ohio
- Weapons research, development, & production facility
- RTG production
- Designated for shutdown in 1991

- Project History - Main Hill Tritium Complex

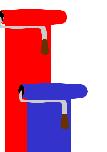
- Three Major Buildings / Facilities,
 SW/R, T, HH
- Mission Weapons related R&D and production
- Operated until September 1998
- Undergoing Safe-Shutdown







- Project History - Tritium LSDDP



- Selected in January 1998 2nd round
- First Integrating Contractor Team (ICT) Meeting in March 1998
- Initial Technology Selections in June 1998
- Extended by one year into FY01





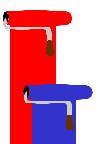
Mound ICT Members

- Babcock & Wilcox of Ohio
- Lawrence Livermore National Laboratory





Mound ICT Members - cont.

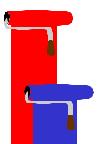


- Princeton Plasma Physics Laboratory
- Foster Wheeler Environmental Corp.
- Los Alamos National Laboratory
- IT Corp.





Mound ICT Members - cont.



- Westinghouse Savannah River Co.
- British Nuclear Fuels Limited
- Florida International University





Main Hill Tritium Safe-Shutdown Needs

- Tritium contaminated glove boxes decontamination / dismantlement
- Tritium characterization techniques
- Tritium specialties decontamination

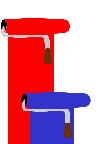




Main Hill Tritium Safe-Shutdown Needs - cont.

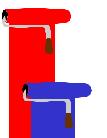
- Mixed waste treatment and disposal
- Tritiated water treatment
- Piping system removal and disposition







Site Technology Coordinating Group Needs



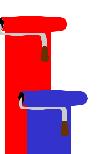
- Improved facility survey techniques
- Decontamination technique for tritiated glove boxes
- Method for controlling off-gassing and removable tritium contamination inside piping
- Extraction of plutonium and thorium from soils



Site Technology Coordinating Group Needs - cont.

- Treatment/disposal of tritiated pump oil & mercury
- Tritium soil treatment
- Soil counting system which accepts soil slugs
- Portable Unit for Preparing Field Soil Samples
- Automated Dust Suppression System



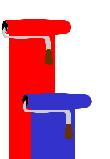




Tritium LSDDP Goals

- Improved health and safety conditions
- Improved productivity and thus reduced schedules
- Improved D&D economics
- Demonstrated potential for complexwide implementation





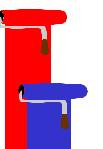


Scope of Work

- Systematically explore and identify methods to improve worker safety while achieving cost and schedule savings
- Integrate and demonstrate a variety of improved/innovative, commercially available technologies on a radioactive full-scale facility



Technical Approach



- Identify developed, field ready technologies
- Review and assess technologies
- Rank technologies for order of preference

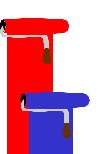


Technical Approach - cont.



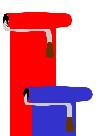
- Authorize the technology
- Designate Lead Test Engineer
- Develop Test/Work plan
- Finalize schedule/cost







Technical Approach - cont.



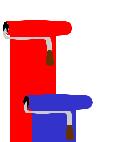
- Acquire the technology
- Demonstrate the technology / collect data
- Compile data / develop reports
- Publish ITSR



Technologies Evaluated

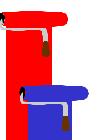
- 65 total technologies todate
 - Characterization 18
 - Decontamination 18
 - Scabbling 6
 - Disassembly 7
 - PPE 3
 - Other 13







Technologies Selected

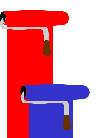


- Seven Demonstrations scheduled for FY99
 - Three completed
 - One scheduled for June
 - One scheduled for July
 - Two scheduled for August





Technologies FY99

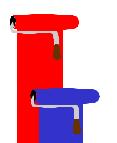


- Technical Associates Inc. PTS-27 Gas Ionization Direct Reading Tritium Detector System
- Lumi-Scint Portable Liquid Scintillation Counter
- Waterworks Crystals Superabsorbent Polymer (WWC)





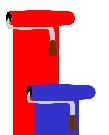
Technologies FY99 - cont.



- Hydraulic Crimper for sealing gastight, double-walled pipe
- NOCHAR® oil solidification polymer
- Tritium Clean-up Cart



Future Plans

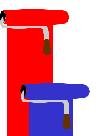


- Six (minimum) demonstrations for FY00
- Six (minimum) demonstrations for FY01
- Continue to search for technologies





Technologies - FY00



- Solid-state Pin Diode direct reading surface tritium detector (mid FY00)
- QP Direct reading surface tritium proportional counter system (early FY00)
- Metal tritides detector (pending)

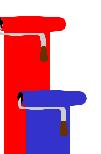




Technologies - FY00 - cont.

- Rad Elec passive tritium air & surface monitor (early FY00)
- DBATS individual glove box tritium scrubbing system (mid FY00)
- Fiber-optic scintillation tritium detector for high activity liquids (pending)





Technologies - FY01

- All possible, pending additional information:
 - SAMMS heavy metals removal from liquids
 - Techxtract H-3 Decon liquid
 - Wall Crawler Robotic dry decon system



Technologies - FY01 - cont.

- "Hot-gas" decon system for large area decontamination
- Aerosol fogging ductwork lockdown/ fixing system
- Abrasive-wire glove box cutting



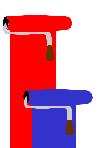


Communications



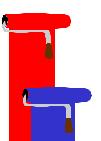
- Use existing communication methods
- Use the most effective communication medium
- Focus on the technology end users







Communications - cont.



- CBD notice
- Talks / Presentations
- Handout / Fact Sheets
- Conferences / Papers / Booths
- Video



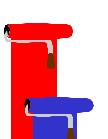


Budget

- \$5M total project*
 - \$0.6M FY98
 - \$1.6M FY99
 - \$1.4M FY00*
 - \$1.4M FY01*

* estimated







Budget FY98

\$550 K

	<u>Planned</u>	Act .
Management	\$ 30K	\$ 40K
Tech Selection	\$270K	\$290K
Demonstration	\$220K	\$ 10K
 Communication 	\$ 30K	\$ 20K
Carry over	\$ 0	\$190K





Summary

- Thorough start
 - Well defined MHT needs
 - Matched needs to technologies
- Good acceptance / deployment %
- Technologies useful across DOE complex



